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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/764,139	01/22/2004	Paul P. Duron	4072	6079

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TROJAN LAW OFFICES  
9250 WILSHIRE BLVD  
SUITE 325  
BEVERLY HILLS, CA 90212

EXAMINER

BELT, SAMUEL E

ART UNIT PAPER NUMBER

3746

DATE MAILED: 08/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/764,139	<b>Applicant(s)</b> DURON, PAUL P.	
	<b>Examiner</b> Samuel E. Belt	<b>Art Unit</b> 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 01/22/2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Specification***

The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

### ***Claim objections***

Claim 2 is objected to because of the following informalities:

- The phrase "in which each of said pair piston heads" is unclear as to whether the applicant is claiming two separate pairs of pistons, which would result in 4 piston heads or just meant to say, "in which each of said piston heads has a separate piston seal". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

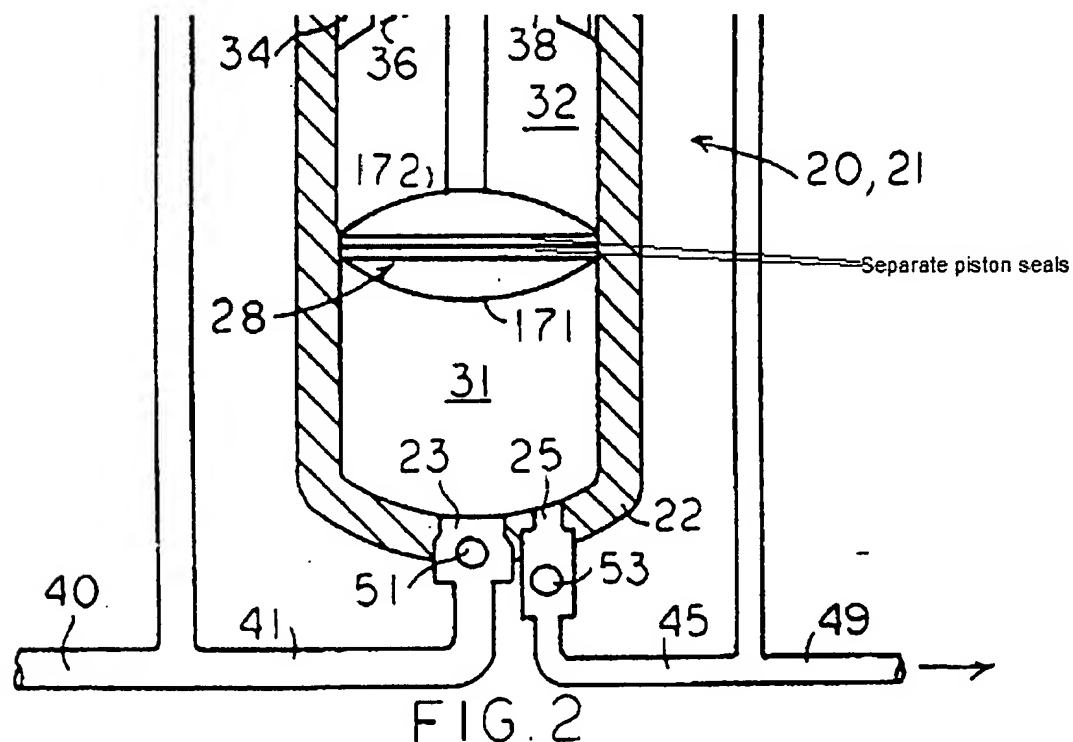
Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Gram

Art Unit: 3746

(U.S. 5,477,690).

Gram discloses a double-acting, reciprocating piston, high pressure, cryogenic pump comprising; a cylinder; a piston rod (Figure 2, item 30); a pair of spaced apart piston heads (Figure 2, items 171, 172) on said piston rod; a venting passageway for venting blow-by vapors or fluids between the piston heads (column 9, lines 26 +, see note); whereby blow-by vapors or fluids are reclaimed and do not interfere with normal operation of said cryogenic pump; each of the piston heads having a separate seal

(**Notes:** The examiner is interpreting both piston faces 171 & 172 as being separate "piston heads" which are both mounted onto the same piston rod and each has its own separate seals, see figure below.



End Notes)

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gram (U.S. 5,477,690) in view of Schuck (U.S. 4,447,195).

Gram sets forth a device as described above, which is substantially analogous to the claimed invention. The Gram device differs from the claimed invention in that there is no explicit teaching of a piston having a set of three piston seals. Schuck teaches a pump having a plurality of seals (column 10, lines 18+) being attached around the piston.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to modify the Gram device by using a plurality of seals as taught by Schuck in order to prevent fluid from escaping from said pumping chamber.

Claims 5-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gram (U.S. 5,477,690) in view of Schuck (U.S. 4,447,195) and further in view of Gram et al. (US Patent Application 2002/0085921).

In regards to claims 5-8 Gram and Schuck set forth a device as described above,

Art Unit: 3746

which is substantially analogous to the claimed invention. The Gram and Schuck device differs from the claimed invention in that there is no explicit teaching of the piston rod having a through passageway for venting the vapor or fluid. Gram et al. teach a pump having a piston rod with a through passage (see paragraph [0075]).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to modify the Gram and Schuck device by using a hollow piston rod as taught by Gram et al. in order to reduce the amount of conduit used for connecting the two pumping chambers and providing a compact design for the system.

In regards to claims 6-9 please refer to figure below for further clarification of the Gram et al. reference.

In regards to claim 11, it is well known that piston heads are spaced apart a distance approximately equal to the length of stroke of said piston rod, specifically when they are mounted to the same rod. This is further shown in Tornare et al. (U.S. Patent 4,639,197).

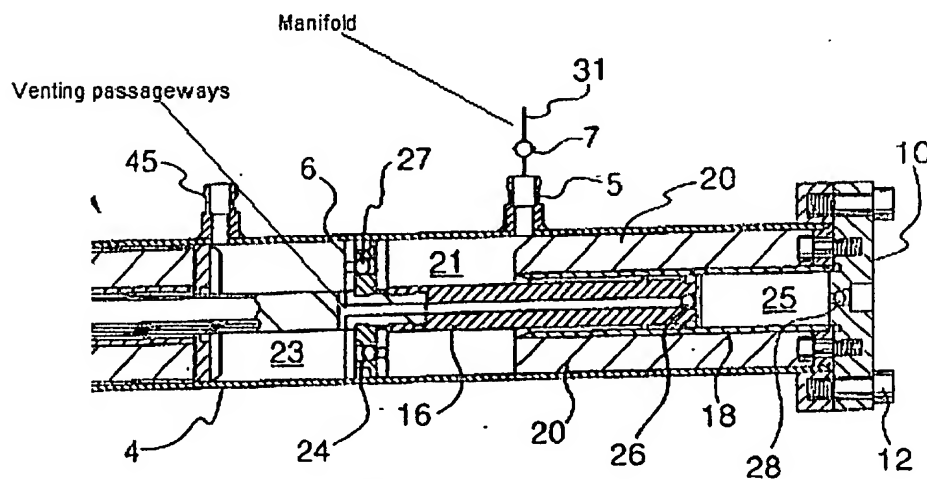


FIG. 1

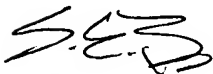
Art Unit: 3746

**Conclusion**

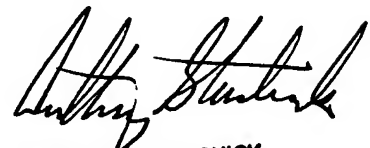
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel E. Belt whose telephone number is (571) 272-7820. The examiner can normally be reached on M-F, 8 - 4:30EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Thorpe can be reached on (571) 272-4444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



SEB



ANTHONY D. STASHICK  
PRIMARY EXAMINER